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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,538	12/30/2004	Akio Nodera	263152US0PCT	9530

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EXAMINER

SANDERS, KRIELLION ANTIONETTE

ART UNIT PAPER NUMBER

1714

DATE MAILED: 08/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/518,538

Applicant(s)

NODERA, AKIO

Examiner

Kriellion A. Sanders

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/22/06 has been entered.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3 and 5-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. New claim limitations which require that the content of polyorganosiloxane in the aromatic polycarbonate-polyorganosiloxane copolymer of component (A) is from more than 2 to 4 mass% is not supported by the original disclosure. Applicant's specification at page 9, lines 3-14 indicates that the amount of polyorganosiloxane in the aromatic polycarbonate-polyorganosiloxane copolymer of component (A) is from 0.1 to 4.0 mass %. Applicant's presently claimed lower mass % is not set forth in the original specification.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 5-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nodera, US Patent No. 6727312 in view of Nodera et al, US Patent No. 6001929 and Hirai et al, 6,664,313.

Nodera, US Patent No. 6727312 and Nodera et al, US Patent No. 6001929 are relied upon for reasons set forth in the preceeding office action.

Nodera '312 discloses polycarbonates resins that are rendered resistant to flaming by the incorporation of non-halogen and non-phosphorus containing compounds. The invention provides for a polycarbonate resin composition having good flame retardancy and having good impact resistance, high stiffness and good chemical resistance. The flame-retardant polycarbonate resin composition comprises a resin mixture of (A) from 1 to 99% by weight of a polycarbonate and (B) from 1 to 99% by weight of a thermoplastic polyester, and contains, relative to 100 parts by weight of the resin mixture, (C) from 0.01 to 3 parts by weight of a polyfluoro-olefin resin, and (D) from 1 to 400 parts by weight of a polycarbonate-polyorganosiloxane copolymer and/or (E) from 0.1 to 10 parts by weight

of a functional silicone compound. The compositions may further contain an inorganic filler, (F), which is for enhancing the stiffness and the flame retardancy of its moldings. The inorganic filler includes, for example, talc, mica, kaolin, diatomaceous earth, calcium carbonate, calcium sulfate, barium sulfate, glass fibers, carbon fibers, and potassium titanate fibers. Especially preferred for use herein are tabular fillers of, for example, talc and mica, and fibrous fillers. The content of the inorganic filler (F) in the resin composition may fall between 1 and 50 parts by weight, preferably between 2 and 30 parts by weight, relative to 100 parts by weight of the resin mixtures of the components (A) and (B) therein.

Nodera et al, '929 discloses a polycarbonate resin composition which comprises (A) a polycarbonate-polyorganosiloxane copolymer, (B) a polycarbonate resin and (C) a polytetrafluoroethylene which has fibril forming capability and an average molecular weight of at least 500,000 wherein the amount of the polyorganosiloxane moiety contained in the component (A) is 0.1 to 2.0% by weight based on the total amount of the components (A) and (B). The resin composition is excellent in flame retardancy, thermal stability and fluidity while preventing melt dripping at the time of combustion. The resin composition is used to produce electronic equipment. The polytetrafluoroethylene (hereinafter abbreviated to "PTFE") as the component (C) has an average molecular weight of at least 500,000, preferably in the range of 500,000 to 10,000,000, and more preferably in the range of 1,000,000 to 10,000,000. The blending amount of the component (C) is 0.05 to 1.0, preferably 0.1 to 0.5 part by weight based on 100 parts by weight of the total amount of the components (A) and (B).

The resin composition according to the present invention may be compounded, when necessary, with any of various types of inorganic fillers and additives, other kinds of synthetic resins or elastomers, or the like (hereinafter abbreviated to the component (D)) in addition to the above-mentioned components (A), (B) and (C) to the extent that such compounding does not impair the object of the present invention.

Suitable fillers to be compounded in the PC resin composition s include glass fiber(GF), carbon fiber, glass beads, glass flake, carbon black, calcium sulfate, calcium carbonate, calcium silicate, titanium oxide, alumina, silica, asbestos, talc, clay, mica, powdery quartz and the like. As the aforesaid additive, mention may be made of an antioxidant of hindered phenol base, phosphorus base such as phosphorous ester base and phosphoric ester base or the like; a ultraviolet absorber of benzotriazole base or benzophenone base; an external lubricant such as an aliphatic carboxylic acid ester, paraffin, silicone oil, polyethylene wax or the like; a mold release agent; an antistatic agent, a coloring agent; and the like.

Each of Nodera and Nodera et al disclose that fillers may be incorporated into the patented compositions. Nodera discloses silicon based fillers other than silica. Nodera et al equates silica with many of the fillers disclosed by Nodera

**Hirai et al** discloses a *polycarbonate* resin composition comprising 100 parts by weight of an aromatic *polycarbonate* resin (a), 3 to 30 parts by weight of titanium oxide (b), 0.01 to 9 parts by weight of *silica* (c1), 0.01 to 9 parts by weight of a *polyorganosiloxane* polymer (c2), and 0.01 to 5 parts by weight of polytetrafluoroethylene (d).

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Component (c1) serves to afford outstanding flame retardancy to the *polycarbonate* resin composition in synergism with polytetrafluoroethylene (d) mentioned later. *Silica* (c1), may be fumed *silica*, precipitated *silica* or dug *silica* in a pulverized form (*silica* powder). Fumed *silica* and precipitated *silica* are preferably those having a surface area falling in the range of 50 to 400 m<sup>2</sup>/g. These types of *silica* (c1) easily carry a *polyorganosiloxane* polymer on the surface (by means of absorption, adsorption or holding). The dug *silica* is preferably combined with at least an equal weight of fumed or precipitated *silica* and the mixture is adjusted so that the surface area of the mixed *silica* will fall within the range of 50 to 400 m<sup>2</sup>/g. The *silica* (c1) may be treated with a surface treating agent such as a low-molecular weight hydroxyl- or alkoxyl-terminated polyorganosiloxanes, hexaorganodisiloxanes, hexaorganodisilazanes.

The content of *Silica* (c1) is 0.01 to 9 parts by weight based on 100 parts by weight of the aromatic *polycarbonate* resin (a). When the content of *silica* (c1) is less than 0.01 part by weight, the molded article produced may be unsatisfactory in flame retardancy, mechanical strength and heat resistance, and when the content of *silica* (c1) exceeds 9 parts by weight, the obtained resin composition proves defective in impact resistance and fluidity. The preferred content of *silica* (c1) is 0.05 to 7 parts by weight, more preferably 0.1 to 5 parts by weight, based on 100 parts by weight of the aromatic *polycarbonate* resin. The indicated weight of *silica* (c1) includes the weight of the treating agent in case where *silica* is surface treated with a treating agent such as mentioned above.

The silica particles of Hirai et al are thought to directly correspond to those of applicant's invention. It is not clear from the disclosure of Hirai et al, 6,664,313 that the silica particles

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disclosed therein are outside the size range of the silica particles of applicant's claims as amended, since Hirai et al defines the silica by surface area. It would be obvious to employ the silica particles of Hirai et al in the compositions of Nodera, US Patent No. 6727312 with an expectation of achieving an improvement in flame retardancy, mechanical strength and heat resistance. Hirai et al teaches that utilization of silica particles outside of the disclosed range results in unsatisfactory in flame retardancy, mechanical strength and heat resistance.

Applicant's comparative data in the specification at page 9 has been fully considered, and does indicate unexpected results for the polycarbonate-polyorganosiloxane copolymer of Examples 1 as compared to Comparative Example 4 wherein the examples differ only in the particle size of the silica.

#### ***Response to Arguments***

1. Applicant's arguments filed 5/22/06 have been fully considered but they are not persuasive. In response to applicant's argument that Nodera et al does not suggest the present polycarbonate components wherein the terminal group  $R_2$  is an alkyl group having 10-35 carbon atoms, applicant is advised that Nodera et al '312 discloses that any and every known polycarbonate may be used in the patented invention. See col. 3, lines 63-66. Since the compositions of the patented invention to Nodera et al are said to have good flowability, applicant has shown nothing of an unexpected nature by suggesting that the polycarbonate components wherein the terminal group  $R_2$  is an alkyl group having 10-35 carbon atoms result in improved fluidity of the present compositions. See col. 1, lines 5-10.

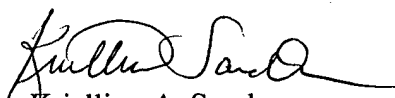


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kriellion A. Sanders whose telephone number is 571-272-1122. The examiner can normally be reached on Monday through Thursday 6:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kriellion A. Sanders  
Primary Examiner  
Art Unit 1714

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